

ABSTRACT OF THE DISCLOSURE

Apparatus for premixing fuel and air to provide a fuel/air mixture includes a mixing tube configured for receiving fuel and air, a mixing tube axis, and a mixing tube exit for discharging a fuel/air mixture. The apparatus further includes a mixture valve associated with the mixing tube exit and including inner and outer valve members that define an exit flow area. The defined exit flow area includes at least two segmented, substantially opposed area portions with respect to angular position about the mixing tube axis for directing the mixture flow, and at least one of the inner and outer valve members is movable relative to the other of said valve members to selectively vary the defined exit flow area with respect to time. In a gas turbine gas generator or engine application, a separate controllable combustion air valve can be used with a fuel valve to provide controlled fuel/air ratios for the mixture.